SEQUENCE LISTING

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Ruezinsky, Diane
Bennett, Kristen
Jander, Georg

<120> Production of Increased Oil and Protein in Plants by the Disruption of the Phenylpropanoid Pathway

<130> REN-01-024

<150> 60/427,313
<151> 2002-11-18

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<213> Glycine max

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catagacata gcaacttctg atcacttgag tgactgagtt atatatatta ttgtagttgt 480
gcaaactagt ttgccctcct catgttttac ttgtggcgaa attaacgatg ttcaatttgt 540
ctgttaaaga tgg 553

<210> 19
<211> 550
<212> DNA
<213> Glycine max

<220>
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<222> (541)..(541)
<223> n = unknown

<400> 19
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ntttgaggtt 550

<210> 20
<211> 519
<212> DNA
<213> Glycine max

<400> 20
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ctccgcttgg cttggaacaa acaggacctg aggtacatgg ccaccatttt aatggacagt 180

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caccgtggga gtgtgaacgc cattgcttgg gctcctcata gctccacgca tatttgttct 300

gctggtgatg atactcaggc tcttatttgg gaattgccca cgcttgcttc tcccactggg 360

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gcccagcccg attggattgc cattgctttt gccaacaaga tgcagctttt gaaggtttga 480

ggtcagaaca aacaattaca cattctagcc acttcattg 519

<210> 21
<211> 498
<212> DNA
<213> Glycine max

<400> 21
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tcccaccccc accgcctcgc cctcggcagc ttcatcgaag aatacaacaa ccgcgtcgac 180

atcctctctt tccaccctga cacccttttcg gtaactcccc acccttctct ctccttcgac 240

cacccttacc ctcccaggaa actcatgttc caccccccgca aaccctcccc ttcctcttcc 300

tccgacctcc tcgccacctc cggcgactac ctccgcctct gggagatccg tgataactcc 360

gtggatgccg tctccctctt caacaacagc aagaccagcg agttctgcgc ccccttaacc 420

tctttcgact gggacgacat cgaccccaac cgcatcgcca cctccaggat cgacaccacc 480

tgcaccatct gggacatc 498

<210> 22
<211> 492
<212> DNA
<213> Glycine max

<400> 22
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tccggcgact acctccgcct ctgggagatc cgtgataact ccgtggatgc cgtctccctc 180

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gaacgcaccc tcgtcgaaac ccaactcatc gctcacgaca aggaggttta cgacatcgcc 360

tggggagagg ccagagtctt cgcctccgtc tccgccgacg gctccgttag aatcttcgac 420

cttcgcgaca aggaacactc caccatcatc tacgagagcc cccaccctga ccccccttg 480

ctccggcttg gt 492

<210> 23
<211> 553
<212> DNA
<213> Glycine max

<400> 23
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cacctccggc gactacctcc gcctctggga ggtccgcgac aactccgtgg aggccgtctc 360

ccttttcaac aacagcaaga ccagcgagtt ctgcgccccc ttaacctcct tcgactggaa 420

cgatatcgac cccaaccgca tcgccacctc cagcatcgac accacctgca ccatctggga 480

catcgaacgc accctcgtcg aaacccaact catcgcgcac gacaaagagg tctacgacat 540

cgcatgggga gag 553

<210> 24
<211> 582
<212> DNA
<213> Glycine max

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acatcgaacg caccctcgtc gaaacccaac tcatcgcgca cgacaaagag gtctacgaca 180

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tcgacctacg cgacaaggag cactccacca tcatctacga gagcccccac cctgacaccc 300

ctctgctccg tttggcttgg aacaaacagg acctgaggta catggctact attttaatgg 360

acagtaataa agttgtgatt ttggatatta ggtctcccac tacccctgtt gcggagttag 420

agaggcacca aactcatgtt ccaccctcgc atacccgcct actactgctc cgacctgctc 480

gccacctccg gcgactacct ccgcctctgg gatgtccgcg acaactccgt ggaggccgtc 540

ttccttttca acaacagcag accagctagt cttgcgcccc tt 582

<210> 25
<211> 378
<212> DNA
<213> Glycine max

<400> 25
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tttgggaatt gcccacgctt gcttctccca ctgggattga tcccgtctgc atgtactctg 180

ctggctgtga aattaaccag ctgcagtggt ccgccgccca gcccgattgg attgccattg 240

cttttgccaa caagatgcag cttttgaagg tttgaggtca gaacaaacaa ttacacattc 300

tagccacttc attgtggcat agacatagca acttctgatc acttgagtga ctgagttata 360

tatattattg tagttgtg 378

<210> 26
<211> 360
<212> DNA
<213> Glycine max

<400> 26
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ctatgtctat gccacaatga agtggctaga atgtgtaatt gtttgttctg acctcaaacc 120

ttcaaaagct gcatcttgtt ggcaaaagca atggcaatcc aatcgggctg ggcggcggac 180

cactgcagct ggttaatttc acagccagca gagtacatgc agacgggatc aatcccagtg 240

ggagaagcaa gcgtgggcaa ttcccaaata agagcctgag tatcatcacc agcagaacaa 300

aatatgcgtg gagctatgag gagccccagc aaatgcgttc acacttccac ggtgcctctc 360

<210> 27
<211> 476
<212> DNA
<213> Glycine max

<400> 27
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caccccacc gcctggccct cggcagcttc attgaagaat acaccaaccg cgttgacatc 180

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ctcctcgcca cctccggcga ctacctccgc ctctgggagg tccgcgacaa ctccgtggag 360

gccgtctccc ttttcaacaa cagcaagacc agcgagttct gcgccccctt aacctccttc 420

gactggaacg atatcgaccc caaccgcatc gccacctcca gcatcgacac cacctg 476

<210> 28
<211> 440
<212> DNA
<213> Glycine max

<400> 28
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cctggccctc ggcagcttca ttgaagaata caccaaccgc gttgacatcc tctccttcca 180

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tatcgacccc aaccgcatcg 440

<210> 29

<211> 467
<212> DNA
<213> Brassica napus

<400> 29
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ggcgggttct acgcgatgtc cggctgctcc tccaccaacc gaatcgccgt cgggagcttc 120

ctcgaggact acaacaaccg catcgacatc ctctccttcg actccggctc catgtccctc 180

aagccccttc catccctctc cttcgagcac ccttaccctc ccaccaagct catgttcagt 240

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cgcctctggg aggtcaacga agactcctcc tccgcggagc cagtatcggt cctcaacaac 360

agcaagacga gcgagttctg cgcgccgctg acctccttcg actggaacga cgtggagccc 420

aagcggttag gcacgtgcag catcgacacc acgtgcacga tcttgga 467

<210> 30
<211> 469
<212> DNA
<213> Brassica napus

<220>
<221> misc_features
<222> (208)..(302)
<223> n = unknown

<220>
<221> misc_feature
<222> (208)..(302)
<223> n = unknown

<400> 30
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agcccttcc atcctctcct tcgagcancc cttaccnctg nccaccaaag ctcatgttca 240

gtccccctc cctccgcccg aacgggcggg gcgacctnct cgccttctnc ggcgacttcc 300

tncgccttct ggaggtcaac gaagactcct cctccgcgga gccagtatcg gtcctcaaca 360

acagcaagac gagcgagttc tgcgcgccgc tgacctcctt cgactggaac gacgtggagc 420

ccaagcggtt aggcacgtgc agcatcgaca ccacgtgcac gatcttgga 469

<210> 31
<211> 1531
<212> DNA
<213> Arabidopsis thaliana

<400> 31
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tctgacggag gaattcctca aggaaaaccc acacatgtgt gcttacatgg ctccttctct 360

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gaaggccatc aaggagtggg gccagcccaa gtcaaagatc actcatgtcg tcttctgcac 480

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tcaggctctt ttcagtgatg gcgccgccgc actcattgtg gggtcggacc ctgacacatc 780

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tatatatatt cgtttttttt ttttttttt t 1531

<210> 32
<211> 1493
<212> DNA
<213> Hordeum vulgare

<400> 32
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caactgcgtg taccaggcga cctacccaga ctattacttc agagtcacga agagcgagca 180

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gcacatgcac ctaaccgagg agatactaat taagaacccc aagatctgcg cgcacatgga 300

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agctgcggag aaggcaatca aggagtgggg ccagccattg tccaagatca cccacctcgt 420

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aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaa 1493

<210> 33
<211> 1456
<212> DNA
<213> Brassica napus

<400> 33
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cttcttcgtt ggatgagatc agaaaggcac agagagcaga cggtcctgca ggcatcttgg 180

cgataggtac ggccaaccct gcgaaccatg tgctccaagc tgagtatcca gactactact 240

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aaaaaagggc ggccgc 1456

<210> 34
<211> 1357
<212> DNA
<213> Brassica napus

<400> 34
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ggcacggcca accctgcgaa ccatgtgatc caagcggagt atcctgacta ctacttccgc 180

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ggagaaggtc tggagtgggg tgtcttgttt ggtttcggac ctggtctcac cgtagagact 1200

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<210> 35
<211> 695
<212> DNA
<213> Brassica napus

<400> 35
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<213> Glycine max

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<213> Glycine max

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tctcgtcttg atcttgaaag agaatccaaa catgtgtgct tacatggcac cttctttgga 180

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<212> DNA
<213> Glycine max

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<211> 1729
<212> DNA
<213> Glycine max

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<211> 1592
<212> DNA
<213> Glycine max

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<211> 1310
<212> DNA
<213> Glycine max

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acactcgtta cacaattgac ccataaataa acctggttcc agacagttct atagttcaat 180

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tcttatttat tggtatacaa aaagaagcat ttgatgaagg cagggcaggg aaaaaaaatc 360

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<211> 1455
<212> DNA
<213> Glycine max

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<211> 669
<212> DNA
<213> Glycine max

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acaatacaa 669

<210> 75
<211> 912
<212> DNA
<213> Glycine max

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<212> DNA
<213> Glycine max

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<211> 805
<212> DNA
<213> Glycine max

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<210> 78
<211> 540

<212> DNA
<213> Glycine max

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<212> DNA
<213> Brassica napus

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<213> Lycopersicon esculentum

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<210> 84
<211> 685

<212> DNA
<213> Triticum aestivum

<400> 84
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<210> 85
<211> 929
<212> DNA
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<400> 85
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taaggccata aaggaatggg gccagccact gtccaagatc acgcacctcg tcttctgcac 240

cacctccggc gtagacatgc cgggtgccga ctatcagcta accaagatgc tcggactcca 300

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<210> 86
<211> 469
<212> DNA
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<222> (400)..(414)
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<400> 86
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<210> 87
<211> 563
<212> DNA
<213> Triticum aestivum

<220>
<221> misc_feature
<222> (13)..(18)
<223> n = unknown

<400> 87
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<210> 88
<211> 483
<212> DNA
<213> Triticum aestivum

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<210> 89
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<212> DNA
<213> Triticum aestivum

<220>
<221> misc_feature
<222> (673)..(673)
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<400> 89
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<210> 90
<211> 1885
<212> DNA
<213> Triticum aestivum

<400> 90

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<210> 91
<211> 605
<212> DNA
<213> Triticum aestivum

<220>
<221> misc_feature
<222> (25)..(41)
<223> n = unknown

<400> 91
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<210> 92
<211> 1721
<212> DNA
<213> Triticum aestivum

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tgatgtacca acaaggct 258

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<211> 2304
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<212> PRT
<213> Arabidopsis thaliana

<400> 124

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Asn Asp Val Phe Leu Glu Glu Lys Lys Glu Asp Gly Pro Gln Val Pro
        35                  40                  45

Thr Ile Asp Leu Lys Asn Ile Glu Ser Asp Asp Glu Lys Ile Arg Glu
    50                  55                  60

Asn Cys Ile Glu Glu Leu Lys Lys Ala Ser Leu Asp Trp Gly Val Met
65                  70                  75                  80

His Leu Ile Asn His Gly Ile Pro Ala Asp Leu Met Glu Arg Val Lys
                85                  90                  95

Lys Ala Gly Glu Glu Phe Phe Ser Leu Ser Val Glu Glu Lys Glu Lys
            100                 105                 110

Tyr Ala Asn Asp Gln Ala Thr Gly Lys Ile Gln Gly Tyr Gly Ser Lys
        115                 120                 125

Leu Ala Asn Asn Ala Ser Gly Gln Leu Glu Trp Glu Asp Tyr Phe Phe
    130                 135                 140

His Leu Ala Tyr Pro Glu Lys Arg Asp Leu Ser Ile Trp Pro Lys Thr
145                 150                 155                 160

Pro Ser Asp Tyr Ile Glu Ala Thr Ser Glu Tyr Ala Lys Cys Leu Arg
                165                 170                 175

Leu Leu Ala Thr Lys Val Phe Lys Ala Leu Ser Val Gly Leu Gly Leu
            180                 185                 190

Glu Pro Asp Arg Leu Glu Lys Glu Val Gly Gly Leu Glu Glu Leu Leu
        195                 200                 205

Leu Gln Met Lys Ile Asn Tyr Tyr Pro Lys Cys Pro Gln Pro Glu Leu
    210                 215                 220

Ala Leu Gly Val Glu Ala His Thr Asp Val Ser Ala Leu Thr Phe Ile
225                 230                 235                 240

Leu His Asn Met Val Pro Gly Leu Gln Leu Phe Tyr Glu Gly Lys Trp
                245                 250                 255

Val Thr Ala Lys Cys Val Pro Asp Ser Ile Val Met His Ile Gly Asp
            260                 265                 270

Thr Leu Glu Ile Leu Ser Asn Gly Lys Tyr Lys Ser Ile Leu His Arg
        275                 280                 285
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```
Gly Leu Val Asn Lys Glu Lys Val Arg Ile Ser Trp Ala Val Phe Cys
    290                 295                 300

Glu Pro Pro Lys Asp Lys Ile Val Leu Lys Pro Leu Pro Glu Met Val
305                 310                 315                 320

Ser Val Glu Ser Pro Ala Lys Phe Pro Pro Arg Thr Phe Ala Gln His
                325                 330                 335

Ile Glu His Lys Leu Phe Gly Lys Glu Gln Glu Glu Leu Val Ser Glu
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Lys Asn Asp
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<210> 125
<211> 356
<212> PRT
<213> Arabidopsis thaliana

<400> 125

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Ser Ile Pro Lys Glu Tyr Ile Arg Pro Lys Glu Glu Leu Glu Ser Ile
            20                  25                  30

Asn Asp Val Phe Leu Glu Glu Lys Lys Glu Asp Gly Pro Gln Val Pro
        35                  40                  45

Thr Ile Asp Leu Lys Asn Ile Glu Ser Asp Asp Glu Lys Ile Arg Glu
    50                  55                  60

Asn Cys Ile Glu Glu Leu Lys Lys Ala Ser Leu Asp Trp Gly Val Met
65                  70                  75                  80

His Leu Ile Asn His Gly Ile Pro Ala Asp Leu Met Glu Arg Val Lys
                85                  90                  95

Lys Ala Gly Glu Glu Phe Phe Ser Leu Ser Val Glu Glu Lys Glu Lys
            100                 105                 110

Tyr Ala Asn Asp Gln Ala Thr Gly Lys Ile Gln Gly Tyr Gly Ser Lys
        115                 120                 125

Leu Ala Asn Asn Ala Ser Gly Gln Leu Glu Trp Glu Asp Tyr Phe Phe
    130                 135                 140

His Leu Ala Tyr Pro Glu Glu Lys Arg Asp Leu Ser Ile Trp Pro Lys
145                 150                 155                 160
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Thr Pro Ser Asp Tyr Ile Glu Ala Thr Ser Glu Tyr Ala Lys Cys Leu
                165                 170                 175

Arg Leu Leu Ala Thr Lys Val Phe Lys Ala Leu Ser Val Gly Leu Gly
            180                 185                 190

Leu Glu Pro Asp Arg Leu Glu Lys Glu Val Gly Gly Leu Glu Glu Leu
        195                 200                 205

Leu Leu Gln Met Lys Ile Asn Tyr Tyr Pro Lys Cys Pro Gln Pro Glu
    210                 215                 220

Leu Ala Leu Gly Val Glu Ala His Thr Asp Val Ser Ala Leu Thr Phe
225                 230                 235                 240

Ile Leu His Asn Met Val Pro Gly Leu Gln Leu Phe Tyr Glu Gly Lys
                245                 250                 255

Trp Val Thr Ala Lys Cys Val Pro Asp Ser Ile Val Met His Ile Gly
            260                 265                 270

Asp Thr Leu Glu Ile Leu Ser Asn Gly Lys Tyr Lys Ser Ile Leu His
        275                 280                 285

Arg Gly Leu Val Asn Lys Glu Lys Val Arg Ile Ser Trp Ala Val Phe
    290                 295                 300

Cys Glu Pro Pro Lys Asp Lys Ile Val Leu Lys Pro Leu Pro Glu Met
305                 310                 315                 320

Val Ser Val Glu Ser Pro Ala Lys Phe Pro Pro Arg Thr Phe Ala Gln
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His Ile Glu His Lys Leu Phe Gly Lys Glu Gln Glu Glu Leu Val Ser
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Glu Lys Asn Asp
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<210> 126
<211> 356
<212> PRT
<213> Arabidopsis thaliana

<400> 126

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Ser Ile Pro Lys Glu Tyr Ile Arg Pro Lys Glu Glu Leu Glu Ser Ile
            20                  25                  30

Asn Asp Val Phe Leu Glu Glu Lys Lys Glu Asp Gly Pro Gln Val Pro
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        35                  40                  45

Thr Ile Asp Leu Lys Asn Ile Glu Ser Asp Asp Glu Lys Ile Arg Glu
    50                  55                  60

Asn Cys Ile Glu Glu Leu Lys Lys Ala Ser Leu Asp Trp Gly Val Met
65                  70                  75                  80

His Leu Ile Asn His Gly Ile Pro Ala Asp Leu Met Glu Arg Val Lys
                85                  90                  95

Lys Ala Gly Glu Glu Phe Phe Ser Leu Ser Val Glu Glu Lys Glu Lys
            100                 105                 110

Tyr Ala Asn Asp Gln Ala Thr Gly Lys Ile Gln Gly Tyr Gly Ser Lys
        115                 120                 125

Leu Ala Asn Asn Ala Ser Gly Gln Leu Glu Trp Glu Asp Tyr Phe Phe
    130                 135                 140

His Leu Ala Tyr Ser Glu Glu Lys Arg Asp Leu Ser Ile Trp Pro Lys
145                 150                 155                 160

Thr Pro Ser Asp Tyr Ile Glu Ala Thr Ser Glu Tyr Ala Lys Cys Leu
                165                 170                 175

Arg Leu Leu Ala Thr Lys Val Phe Lys Ala Leu Ser Val Gly Leu Gly
            180                 185                 190

Leu Glu Pro Asp Arg Leu Glu Lys Glu Val Gly Gly Leu Glu Glu Leu
        195                 200                 205

Leu Leu Gln Met Lys Ile Asn Tyr Tyr Pro Lys Cys Pro Gln Pro Glu
    210                 215                 220

Leu Ala Leu Gly Val Glu Ala His Thr Asp Val Ser Ala Leu Thr Phe
225                 230                 235                 240

Ile Leu His Asn Met Val Pro Gly Leu Gln Leu Phe Tyr Glu Gly Lys
                245                 250                 255

Trp Val Thr Ala Lys Cys Val Pro Asp Ser Ile Val Met His Ile Gly
            260                 265                 270

Asp Thr Leu Glu Ile Leu Ser Asn Gly Lys Tyr Lys Ser Ile Leu His
        275                 280                 285

Arg Gly Leu Val Asn Lys Glu Lys Val Arg Ile Ser Trp Ala Val Phe
    290                 295                 300

Cys Glu Pro Pro Lys Asp Lys Ile Val Leu Lys Pro Leu Pro Glu Met
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305 310 315 320

Val Ser Val Glu Ser Pro Ala Lys Phe Pro Pro Arg Thr Phe Ala Gln
325 330 335

His Ile Glu His Lys Leu Phe Gly Lys Glu Gln Glu Glu Leu Val Ser
340 345 350

Glu Lys Asn Asp
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<213> Arabidopsis thaliana

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gttgcggttg aaagagttga gagtctagca aaaagcggaa tcatatcgat tccaaaagaa 180

tatattcgtc caaaagaaga gctcgagagc atcaacgatg ttttcctaga agagaagaaa 240

gaagacggtc ctcaagttcc cacaatcgat ctaaagaaca tcgagtcaga cgatgaaaag 300

atccgtgaga attgtattga ggagctgaaa aaggcatctt tggattgggg agtgatgcat 360

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tttttcagtt tgtctgtgga agagaaggag aagtatgcaa acgatcaagc cactggaaag 480

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gttggtggtt tagaagagct tcttctacaa atgaagataa attactatcc aaaatgtcct 780

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aatttaaaga aaaaaaaaaa aaaaaa 1346

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<211> 895
<212> DNA
<213> Hordeum vulgare

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cgcttgggat tagaagaagg aaggctacag aaggaagttg gtggcgtgga agagcttctt 180

cttcaattga aaatcaatta ctaccccaag tgtccacaac cagaactcgc tctcggtgtc 240

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<213> Brassica napus

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<212> DNA
<213> Brassica napus

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cgcgagtgga caacttgagt gggaagatta cttctttcat cttgtttatc ctgaagacaa 240

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<211> 3239
<212> DNA
<213> Zea mays

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<213> Gossypium hirsutum

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<213> Gossypium hirsutum

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<213> Brassica napus

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ctctcggcgg tgtactgcga ggtgatggcc ggcaatccgg agtacaccga ccacctcatc 240

cacgcgctga agcaccaccc tggacagatc gaagctgcgg ccatcatgga gcacatactg 300

gaaggcagct cctacatgag gcttgccaag gagcagggcg aagcttgacc gtgttgacga 360

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cggtcatcga cgtcgcccgc cgcaaggcgc tccaacggcg gcaacttcca gggcactccc 540

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tctggccttg catcgaccgt gctctttgag gctaacattc ttgccatcct cgccgaggtc 240

ctctcggccg tgttctgcga ggtgatgaac ggcaagccgg agtacaccga ccacctgact 300

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ccgaagcaag accggtacgc gctccggaca tccccacagt ggctcggccc tcaaattgag 480

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cggcgtgtcc atggacaaca ccaggctcgc cattgccgcg atcggtaagc tcatgttcgc 660

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aaaaaaaaaa caaa 1334

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<211> 395
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<400> 168

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35 40 45

Thr Asn Ser Glu His Met Thr Asp Leu Lys Glu Lys Phe Lys Arg Met
50 55 60

Cys Asp Lys Ser Thr Ile Arg Lys Arg His Met His Leu Thr Glu Glu
65 70 75 80

Phe Leu Lys Glu Asn Pro His Met Cys Ala Tyr Met Ala Pro Ser Leu
85 90 95

Asp Thr Arg Gln Asp Ile Val Val Val Glu Val Pro Lys Leu Gly Lys
100 105 110

Glu Ala Ala Val Lys Ala Ile Lys Glu Trp Gly Gln Pro Lys Ser Lys
115 120 125

Ile Thr His Val Val Phe Cys Thr Thr Ser Gly Val Asp Met Pro Gly
130 135 140

Ala Asp Tyr Gln Leu Thr Lys Leu Leu Gly Leu Arg Pro Ser Val Lys
145 150 155 160

Arg Leu Met Met Tyr Gln Gln Gly Cys Phe Ala Gly Gly Thr Val Leu
165 170 175

Arg Ile Ala Lys Asp Leu Ala Glu Asn Asn Arg Gly Ala Arg Val Leu
180 185 190

Val Val Cys Ser Glu Ile Thr Ala Val Thr Phe Arg Gly Pro Ser Asp
195 200 205

Thr His Leu Asp Ser Leu Val Gly Gln Ala Leu Phe Ser Asp Gly Ala
210 215 220

Ala Ala Leu Ile Val Gly Ser Asp Pro Asp Thr Ser Val Gly Glu Lys
225 230 235 240

Pro Ile Phe Glu Met Val Ser Ala Ala Gln Thr Ile Leu Pro Asp Ser
245 250 255

Asp Gly Ala Ile Asp Gly His Leu Arg Glu Val Gly Leu Thr Phe His
260 265 270

Leu Leu Lys Asp Val Pro Gly Leu Ile Ser Lys Asn Ile Val Lys Ser
275 280 285

Leu Asp Glu Ala Phe Lys Pro Leu Gly Ile Ser Asp Trp Asn Ser Leu
290 295 300

Phe Trp Ile Ala His Pro Gly Gly Pro Ala Ile Leu Asp Gln Val Glu
305 310 315 320

Ile Lys Leu Gly Leu Lys Glu Glu Lys Met Arg Ala Thr Arg His Val
325 330 335

Leu Ser Glu Tyr Gly Asn Met Ser Ser Ala Cys Val Leu Phe Ile Leu
340 345 350

Asp Glu Met Arg Arg Lys Ser Ala Lys Asp Gly Val Ala Thr Thr Gly
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